

**AMENDMENTS TO THE SEQUENCE LISTING**

**IN THE SEQUENCE LISTING**

Please replace the Sequence Listing of record with the Substitute Sequence Listing enclosed herewith.

Rec'd PCT/PTO 03 OCT 2005

#5

Sequence Listing

<110> KOH, Sang-Seok et al.

<120> GENE FAMILIES ASSOCIATED WITH STOMACH CANCER

<130> 1599-0276PUS1

<140> US 10/524,258

<141> 2005-02-11

<150> PCT/KR03/01653

<151> 2003-08-14

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cggaagctga ggcagctggt acttgacaga gagg atg gcg ctg tcg acc 169

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1 5

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cta aag cga gtc ttc aag cga aag aag cct caa ctt cgt ctg gag aaa 265

Leu Lys Arg Val Phe Lys Arg Lys Lys Pro Gln Leu Arg Leu Glu Lys

25 30 35

agt ggt gac tta ttg gtc cat ctg aac tgt tta ctg ttt gtt cat cga 313

Ser Gly Asp Leu Leu Val His Leu Asn Cys Leu Leu Phe Val His Arg

40 45 50

tta gca gaa gag tcc agg aca aac gct tgt gcg agt aaa tgt aga gtc 361

Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala Ser Lys Cys Arg Val

55 60 65

att aac aag gag cat gta ctg gcc gca gca aag gta att cta aag aag 409

Ile Asn Lys Glu His Val Leu Ala Ala Ala Lys Val Ile Leu Lys Lys

70 75 80 85

agc aga ggt ta gaagtcaaag aacatattct tgaaagttat gatgcattct 460

Ser Arg Gly

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 35 40 45  
 Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala  
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 Met Ala Leu Ser Thr Ile Val Ser Gln Arg Lys  
 1 5 10  
 cag ata aag cgg aag gct ccc cgt ggc ttt cta aag cga gtc ttc aag 219  
 Gln Ile Lys Arg Lys Ala Pro Arg Gly Phe Leu Lys Arg Val Phe Lys  
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 Leu Lys Lys Pro Gln Leu Arg Leu Glu Lys Ser Gly Asp Leu Leu Val  
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cat ctg aac tgt tta ctg ttt gtt cat cga tta gca gaa gag tcc agg 315  
 His Leu Asn Cys Leu Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg  
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aca aac gct tgt gcg agt aaa tgt aga gtc att aac aag gag cat gta 363  
 Thr Asn Ala Cys Ala Ser Lys Cys Arg Val Ile Asn Lys Glu His Val  
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 Leu Ala Ala Ala Lys Val Ile Leu Lys Lys Ser Arg Gly  
 80 85

aaagaacata ttcttgaaag ttatgatgca ttcttttggg tggtaacaga tcataaagac 470

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Leu Arg Leu Glu Lys Ser Gly Asp Leu Leu Val His Leu Asn Cys Leu  
 35 40 45

Leu Phe Val His Arg Leu Ala Glu Glu Ser Arg Thr Asn Ala Cys Ala  
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ctt cct cac ccc ctc agc aca gga gga ctc cct gta gcc tca gaa gat Leu Pro His Pro Leu Ser Thr Gly Gly Leu Pro Val Ala Ser Glu Asp 25 30 35		142
gga gct ctc agg gcc cct gag agc caa agc gtg acc ccc aag cca ctg Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val Thr Pro Lys Pro Leu 40 45 50		190
gag act gag cct agc agg gag acc gcc tgg tcc ata ggc ctt cag gtg Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser Ile Gly Leu Gln Val 55 60 65		238
acc gtg ccc ttc atg ttt gca ggc ctg gga ctg tcc tgg gcc ggc atg Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu Ser Trp Ala Gly Met 70 75 80 85		286
ctt ctg gac tat ttc cag gcc aac act gga caa att gat gac ccc cag Leu Leu Asp Tyr Phe Gln Ala Asn Thr Gly Gln Ile Asp Asp Pro Gln 90 95 100		334
gag cag cac aga gtc atc agc agc aac ctg gcc ctc atc cag gtg cag Glu Gln His Arg Val Ile Ser Ser Asn Leu Ala Leu Ile Gln Val Gln 105 110 115		382
gcc act gtc gtg ggg ctc ttg gct gct gtg gct gcg ctg ctg ttg ggc Ala Thr Val Val Gly Leu Leu Ala Ala Val Ala Ala Leu Leu Leu Gly 120 125 130		430
gtg gtg tct cga gag gaa gtg gat gtc gcc aag gtg gag ttg ctg tgt Val Val Ser Arg Glu Glu Val Asp Val Ala Lys Val Glu Leu Leu Cys 135 140 145		478
gcc agc agt gtc ctc act gcc ttc ctt gca gcc ttt gcc ctg ggg gtg Ala Ser Ser Val Leu Thr Ala Phe Leu Ala Ala Phe Ala Leu Gly Val 150 155 160 165		526
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gac aac att gcc acg ccc att gca gcc agc ctg gga gac ctc atc aca Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu Gly Asp Leu Ile Thr 185 190 195		622
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agt cgg tat ctg acg ccg ctg gtc tgc ctc agc ttt gcg gct ctg acc		718

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cca	gtg	tgg	gtc	ctc	att	gcc	aag	cag	agc	cca	ccc	atc	gtg	aag	atc		766
Pro	Val	Trp	Val	Leu	Ile	Ala	Lys	Gln	Ser	Pro	Pro	Ile	Val	Lys	Ile		
230					235					240					245		
ctg	aag	ttt	ggc	tgg	ttc	cca	atc	atc	ctg	gcc	atg	gtc	atc	agc	agt		814
Leu	Lys	Phe	Gly	Trp	Phe	Pro	Ile	Ile	Leu	Ala	Met	Val	Ile	Ser	Ser		
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ttc	gga	gga	ctc	atc	ttg	agc	aaa	acc	gtt	tct	aaa	cag	cag	tac	aaa		862
Phe	Gly	Gly	Leu	Ile	Leu	Ser	Lys	Thr	Val	Ser	Lys	Gln	Gln	Tyr	Lys		
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ggc	atg	gcg	ata	ttt	acc	ccc	gtc	ata	tgt	ggg	gtt	ggg	ggc	aat	ctg		910
Gly	Met	Ala	Ile	Phe	Thr	Pro	Val	Ile	Cys	Gly	Val	Gly	Gly	Asn	Leu		
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gtg	gcc	att	cag	acc	agc	cga	atc	tca	acc	tac	ctg	cac	atg	tgg	agt		958
Val	Ala	Ile	Gln	Thr	Ser	Arg	Ile	Ser	Thr	Tyr	Leu	His	Met	Trp	Ser		
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gca	cct	ggc	gtc	ctg	ccc	ctc	cag	atg	aag	aaa	ttc	tgg	ccc	aac	ccg		1006
Ala	Pro	Gly	Val	Leu	Pro	Leu	Gln	Met	Lys	Lys	Phe	Trp	Pro	Asn	Pro		
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Cys	Ser	Thr	Phe	Cys	Thr	Ser	Glu	Ile	Asn	Ser	Met	Ser	Ala	Arg	Val		
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Leu	Leu	Leu	Leu	Val	Val	Pro	Gly	His	Leu	Ile	Phe	Phe	Tyr	Ile	Ile		
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Tyr	Leu	Val	Glu	Gly	Gln	Ser	Val	Ile	Asn	Ser	Gln	Thr	Phe	Val	Val		
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ctc	tac	ctg	ctg	gca	ggc	ctg	atc	cag	gtg	aca	atc	ctg	ctg	tac	ctg		1198
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gca	gaa	gtg	atg	gtt	cgg	ctg	act	tgg	cac	cag	gcc	ctg	gat	cct	gac		1246
Ala	Glu	Val	Met	Val	Arg	Leu	Thr	Trp	His	Gln	Ala	Leu	Asp	Pro	Asp		
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aac	cac	tgc	atc	ccc	tac	ctt	aca	ggg	ctg	ggg	gac	ctg	ctc	ggg	act		1294
Asn	His	Cys	Ile	Pro	Tyr	Leu	Thr	Gly	Leu	Gly	Asp	Leu	Leu	Gly	Thr		
				410					415					420			
ggc	ctc	ctg	gca	ctc	tgc	ttt	ttc	act	gac	tgg	cta	ctg	aag	agc	aag		1342
Gly	Leu	Leu	Ala	Leu	Cys	Phe	Phe	Thr	Asp	Trp	Leu	Leu	Lys	Ser	Lys		
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440

445

450

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agaagaggca tgtccagtat gctttgcagg gtgtgtttgc tcttttccat gcccatgcaa      1750
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Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser
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Ile Gly Leu Gln Val Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu
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Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln Ala Asn Thr Gly Gln
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 165 170 175  
 Leu Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu  
 180 185 190  
 Gly Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val Ser Ser Phe Phe  
 195 200 205  
 Tyr Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu Val Cys Leu Ser  
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 Phe Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala Lys Gln Ser Pro  
 225 230 235 240  
 Pro Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro Ile Ile Leu Ala  
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 Lys Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro Val Ile Cys Gly  
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 Val Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg Ile Ser Thr Tyr  
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 Asp Leu Leu Gly Thr Gly Leu Leu Ala Leu Cys Phe Phe Thr Asp Trp  
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 Thr Arg Gln Arg Arg Leu Asp Ser Cys Gly Lys Pro Gly Glu Leu Gly  
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 Gly Ala Leu Arg Ala Pro Glu Ser Gln Ser Val Thr Pro Lys Pro Leu  
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 Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser Ile Gly Leu Gln Val  
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 Thr Val Pro Phe Met Phe Ala Gly Leu Gly Leu Ser Trp Ala Gly Met  
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 Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe Val Glu Val Lys Asp  
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Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser Val Ile Asn Ser Gln	
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Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu Ile Gln Val Thr Ile	
410 415 420	

ctg ctg tac ctg gca gaa gtg atg gtt cgg ctg act tgg cac cag gcc	1351
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440 445 450	

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455 460 465	

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Leu Lys Ser Lys Ala Glu Leu Gly Gly Ile Ser Glu Leu Ala Ser Gly	
470 475 480 485	

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<212> PRT  
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Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser  
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Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe  
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Val Glu Val Lys Asp Leu Leu Thr Leu Val Pro Pro Leu Val Gly Leu  
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Lys Gly Asn Leu Glu Met Thr Leu Ala Ser Arg Leu Ser Thr Ala Ala  
115 120 125

Asn Thr Gly Gln Ile Asp Asp Pro Gln Glu Gln His Arg Val Ile Ser  
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Ser Asn Leu Ala Leu Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu  
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Ala Ala Val Ala Ala Leu Leu Leu Gly Val Val Ser Arg Glu Glu Val  
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Asp Val Ala Lys Val Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala  
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Phe Leu Ala Ala Phe Ala Leu Gly Val Leu Met Val Cys Ile Val Ile  
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Gly Ala Arg Lys Leu Gly Val Asn Pro Asp Asn Ile Ala Thr Pro Ile  
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Ala Ala Ser Leu Gly Asp Leu Ile Thr Leu Ser Ile Leu Ala Leu Val  
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Ser Ser Phe Phe Tyr Arg His Lys Asp Ser Arg Tyr Leu Thr Pro Leu  
245 250 255

Val Cys Leu Ser Phe Ala Ala Leu Thr Pro Val Trp Val Leu Ile Ala  
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Lys Gln Ser Pro Pro Ile Val Lys Ile Leu Lys Phe Gly Trp Phe Pro  
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Ile Ile Leu Ala Met Val Ile Ser Ser Phe Gly Gly Leu Ile Leu Ser  
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Lys Thr Val Ser Lys Gln Gln Tyr Lys Gly Met Ala Ile Phe Thr Pro  
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Val Ile Cys Gly Val Gly Gly Asn Leu Val Ala Ile Gln Thr Ser Arg  
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Ile Ser Thr Tyr Leu His Met Trp Ser Ala Pro Gly Val Leu Pro Leu  
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Gln Met Lys Lys Phe Trp Pro Asn Pro Cys Ser Thr Phe Cys Thr Ser  
 355 360 365

Glu Ile Asn Ser Met Ser Ala Arg Val Leu Leu Leu Leu Val Val Pro  
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Gly His Leu Ile Phe Phe Tyr Ile Ile Tyr Leu Val Glu Gly Gln Ser  
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Val Ile Asn Ser Gln Thr Phe Val Val Leu Tyr Leu Leu Ala Gly Leu  
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Ile Gln Val Thr Ile Leu Leu Tyr Leu Ala Glu Val Met Val Arg Leu  
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cca gac aac att gcc acg ccc att gca gcc agc ctg gga gac ctc atc Pro Asp Asn Ile Ala Thr Pro Ile Ala Ala Ser Leu Gly Asp Leu Ile 220 225 230	726
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Asp	Ser	Arg	Tyr	Leu	Thr	Pro	Leu	Val	Cys	Leu	Ser	Phe	Ala	Ala	Leu	
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acc	cca	gtg	tgg	gtc	ctc	att	gcc	aag	cag	agc	cca	ccc	atc	gtg	aag	870
Thr	Pro	Val	Trp	Val	Leu	Ile	Ala	Lys	Gln	Ser	Pro	Pro	Ile	Val	Lys	
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atc	ctg	aag	ttt	ggc	tgg	ttc	cca	atc	atc	ctg	gcc	atg	gtc	atc	agc	918
Ile	Leu	Lys	Phe	Gly	Trp	Phe	Pro	Ile	Ile	Leu	Ala	Met	Val	Ile	Ser	
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Ser	Phe	Gly	Gly	Leu	Ile	Leu	Ser	Lys	Thr	Val	Ser	Lys	Gln	Gln	Tyr	
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Lys	Gly	Met	Ala	Ile	Phe	Thr	Pro	Val	Ile	Cys	Gly	Val	Gly	Gly	Asn	
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Leu	Val	Ala	Ile	Gln	Thr	Ser	Arg	Ile	Ser	Thr	Tyr	Leu	His	Met	Trp	
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Ser	Ala	Pro	Gly	Val	Leu	Pro	Leu	Gln	Met	Lys	Lys	Phe	Trp	Pro	Asn	
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ccg	tgt	tct	act	ttc	tgc	acg	tca	gaa	atc	aat	tcc	atg	tca	gct	cga	1158
Pro	Cys	Ser	Thr	Phe	Cys	Thr	Ser	Glu	Ile	Asn	Ser	Met	Ser	Ala	Arg	
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gtc	ctg	ctc	ttg	ctg	gtg	gtc	cca	ggc	cat	ctg	att	ttc	ttc	tac	atc	1206
Val	Leu	Leu	Leu	Leu	Val	Val	Pro	Gly	His	Leu	Ile	Phe	Phe	Tyr	Ile	
			380					385					390			
atc	tac	ctg	gtg	gag	ggt	cag	tca	gtc	ata	aac	agc	cag	acc	ttt	gtg	1254
Ile	Tyr	Leu	Val	Glu	Gly	Gln	Ser	Val	Ile	Asn	Ser	Gln	Thr	Phe	Val	
	395						400					405				
gtg	ctc	tac	ctg	ctg	gca	ggc	ctg	atc	cag	gtg	aca	atc	ctg	ctg	tac	1302
Val	Leu	Tyr	Leu	Leu	Ala	Gly	Leu	Ile	Gln	Val	Thr	Ile	Leu	Leu	Tyr	
	410					415					420					
ctg	gca	gaa	gtg	atg	gtt	cgg	ctg	act	tgg	cac	cag	gcc	ctg	gat	cct	1350
Leu	Ala	Glu	Val	Met	Val	Arg	Leu	Thr	Trp	His	Gln	Ala	Leu	Asp	Pro	
	425				430					435					440	
gac	aac	cac	tgc	atc	ccc	tac	ctt	aca	ggg	ctg	ggg	gac	ctg	ctc	ggt	1398
Asp	Asn	His	Cys	Ile	Pro	Tyr	Leu	Thr	Gly	Leu	Gly	Asp	Leu	Leu	Gly	
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tca	agc	tcc	gtg	ggc	cac	act	gct	gct	gtg	cca	aga	agg	tgt	aca	gcc	1446
Ser	Ser	Ser	Val	Gly	His	Thr	Ala	Ala	Val	Pro	Arg	Arg	Cys	Thr	Ala	

460	465	470	
tcc cca gga tgg ggc ctc ata caa ccc ttc atc tgc act caa cat tta			1494
Ser Pro Gly Trp Gly Leu Ile Gln Pro Phe Ile Cys Thr Gln His Leu			
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 Thr Pro Lys Pro Leu Glu Thr Glu Pro Ser Arg Glu Thr Ala Trp Ser  
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 Ser Trp Ala Gly Met Leu Leu Asp Tyr Phe Gln His Trp Pro Val Phe  
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 Val Glu Val Lys Asp Leu Leu Thr Leu Val Pro Pro Leu Val Gly Leu  
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 Ser Asn Leu Ala Leu Ile Gln Val Gln Ala Thr Val Val Gly Leu Leu  
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 Asp Val Ala Lys Val Glu Leu Leu Cys Ala Ser Ser Val Leu Thr Ala



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Phe	Leu	Ala	Ala	Phe	Ala	Leu	Gly	Val	Leu	Met	Val	Cys	Ile	Val	Ile	
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Ser	Ser	Phe	Phe	Tyr	Arg	His	Lys	Asp	Ser	Arg	Tyr	Leu	Thr	Pro	Leu	
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Lys	Gln	Ser	Pro	Pro	Ile	Val	Lys	Ile	Leu	Lys	Phe	Gly	Trp	Phe	Pro	
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Thr	Trp	His	Gln	Ala	Leu	Asp	Pro	Asp	Asn	His	Cys	Ile	Pro	Tyr	Leu	
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Ala	Val	Pro	Arg	Arg	Cys	Thr	Ala	Ser	Pro	Gly	Trp	Gly	Leu	Ile	Gln	
465					470					475					480	
Pro	Phe	Ile	Cys	Thr	Gln	His	Leu	Ile	Val	Ser	Leu	Leu	Ser	Phe	Tyr	

485

490

495

Phe Pro Phe Cys Leu Leu Ala Lys Thr Ser Ile  
500 505

